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| 10/775,828 | 02/09/2004 | Jiachun Zhou | K&S-151US | 8171 |
| 23122 | 7590 | 09/30/2005 | EXAMINER | |
| RATNERPRESTIA | | | KOBERT, RUSSELL MARC | |
| P O BOX 980 | | | ART UNIT | PAPER NUMBER |
| VALLEY FORGE, PA 19482-0980 | | | 2829 | |

DATE MAILED: 09/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/775,828

Applicant(s)

ZHOU ET AL.

Examiner

Russell M. Kobert

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2004 and 22 October 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 0205.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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1. Claims 1-23 are objected to because it is not clearly understood what was intended by the phrase "a back surface substantially rotationally symmetric with respect to said center axis, said back surface having a continuous curvature that is at a maximum radius in proximity of said center axis and decreases towards a back circumference of said plunger pin" as recited in claims 1 and 13. How can a "back surface" be defined by a radial distance that is not a point but is instead a line (axis)? No definite reference point can be determined to reference such a limitation. One having ordinary skill in the art can only assume that some point of reference is used to draw the described "back surface." Also, the term "ACE" should be spelled out at least once in each base claim.

Appropriate correction is required.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Nagatsuka et al (6204681).

Nagatsuka et al anticipates (Figure 7) an ACE multiplicatively indenting plunger comprising:

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a center axis (although not specifically shown, it is considered an inherent characteristic of the structural relationship between the contact tips 27 and the keeper plate 29; the axis is orthogonal to the keeper plate and is parallel to the elongated portion of the contact tips) substantially parallel with an impinging direction of said plunger pin;

a back surface (upper portion of contact tips 27) substantially rotationally symmetric with respect to said center axis, said back surface having a continuous curvature that is at a maximum radius (note very top portion of the contact tips 27 are rounded not as sharp as adjacent sides of the curvature portion) in proximity of said center axis and decreases towards a back circumference of said plunger pin; as recited in claim 1.

As to claim 2, the back surface seamlessly transitioning into the back circumference is clearly shown in Figure 7 at the top portion of contact tips 27.

As to claim 3, the back surface of the plunger pin having a surface height that is at least equal to an indenting depth of the back surface of the ACE is clearly shown; the height of the ACE (26) according to Nagatsuka et al is greater than the height of the back surface of the plunger pin.

As to claim 4, the maximum radius being infinite appears to be evident in Figure 7, as the upper portions of contact pins 27 appear nearly flat.

As to claim 5, the back surface being an ellipsoid with a short axis of the ellipsoid's central cross section substantially coincides with the center axis is clearly shown in the contact pins 27 (uppermost portion) of Figure 7.

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As to claim 6, a guide section (apertures 28a and 29a both part of keeper plate 29) extending along the center axis is clearly shown.

As to claim 7, having the back circumference being independent of a guide circumference of the guide section is clearly shown in the relational configuration of elements 27, 28a, 29a of Figure 7.

As to claim 8, having a recess section having a finite length along the center axis wherein the recess section has a recess circumference (boundary formed inside cup 50c of pin 50) that is offset from the guide circumference in a direction towards the center axis is shown in Figure 10.

As to claim 9, the limitations of slidably holding the plunger pin in a guiding perforation of a carrier frame wherein the guiding perforation being correspondingly shaped with the guide section such that the plunger pin slides in a guided fashion along the center axis is considered an inherent property of Nagatsuka et al and the additional limitations of claims 10 and 11 are considered inherent properties of Nagatsuka et al.

As to claim 12, the added limitation of the plunger pin further comprising a pin front end having a number of crown peaks substantially rotationally symmetrically arrayed with respect to the center axis is clearly shown in Figure 9.

Nagatsuka et al anticipates (Figure 7) a multiple testing probe apparatus comprising:

a base contact (21a);

an ACE (26) having a top and a bottom, wherein said top is in conductive contact with said base contact;

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a carrier frame (25) having a guiding means (inherent characteristic of internal sides, abutting the ACE, of the frame (25)) extending between a top and a bottom of said carrier frame, said frame top being immediately adjacent to said ACE bottom; and

a plunger pin having:

a center axis (although not specifically shown, it is considered an inherent characteristic of the structural relationship between the contact tips 27 and the keeper plate 29; the axis is orthogonal to the keeper plate and is parallel to the elongated portion of the contact tips) substantially parallel with an impinging direction of said plunger pin;

a back surface (upper portion of contact tips 27) substantially rotationally symmetric with respect to said center axis, said back surface having a continuous curvature that is at a maximum radius (note very top portion of the contact tips 27 are rounded not as sharp as adjacent sides of the curvature portion) in proximity of said center axis and decreases towards a back circumference of said plunger pin such that for a given indenting depth of said back surface into said ACE bottom a relevant deformation in an impinging vicinity of said ACE remains on an overall minimum, said impinging vicinity being immediately adjacent to said impinging back surface;

a guiding feature (apertures 28a and 29a both part of keeper plate 29) corresponding to said guiding means such that said plunger pin is moveable along said center axis at least up to said indenting depth; and an electrically conductive pin front end (bottom portion of 27) such that an insulated conductive

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path (inherent to ACE 26) is established between said pin front end and said base contact and such that simultaneously an opposing force is exerted from said ACE via said back surface onto said plunger pin while said plunger pin is displaced in one of multiple displacements with said indenting depth along said center axis in direction of said ACE (col7, ln 15 - col 10, ln 56); as recited in claim 13. Additionally, the limitations of claims 14-23 are considered inherent and anticipated by Nagatsuka et al.

4. Claims 1-23 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Kazama et al (5798655) (see Figures 1-3).

5. Claims 1-5 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Yoshizawa et al (5819406) (see Figures 10A, 10B, 11A and 11B).

6. A shortened statutory period for response to this action is set to expire three month(s) from the date of this letter. Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Russell Kobert whose telephone number is (571) 272-1963. The Examiner's Supervisor, Nestor R. Ramirez, can be reached at (571) 272-2034. For an automated menu of Tech Center 2800 phone numbers call (571) 272-2800.



Russell M. Kobert
Patent Examiner
Group Art Unit 2829
September 28, 2005



VINH NGUYEN
PRIMARY EXAMINER

A.u. 2829
09/28/05